Science Needs for the Protection, Conservation, and Recovery of Southeast Protected Resources

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Presentation Overview

- SERO Protected Resources Division and Protected Species in the Southeast

- Legal Mandates and Priorities

- SERO Sea Turtle Program

  - Activities, Management Priorities, and Science Needs

- SERO Marine Mammal Program

  - Activities, Management Priorities, and Science Needs

- Ways To Enhance Collaboration

SERO Protected Resources Division

- Comprised of 5 Branches
  - Marine Mammal Branch (7 Federal, 1 Contract)
  - ES Branch – Interagency Cooperation (10 Federal, 6 Contract)
  - ES Branch – Sea Turtle and Fisheries Coordination (6 Federal)
  - ES Branch – Species Conservation (5 Federal)
  - *ES Branch – Coral Program (6 Federal, 3 Coop. and Contract)*

Species and Critical Habitat Protected Under ESA

- **6 Marine Mammals**: right*, sperm, blue, humpback, fin, and sei

- **6 Sea Turtles**: green*, hawksbill*, Kemp's ridley, leatherback*, loggerhead*, and olive ridley

- **5 Fish**: Atlantic sturgeon, Gulf sturgeon*, shortnose sturgeon, smalltooth sawfish, and scalloped hammerhead (Nassau grouper proposed for listing as threatened)

- **7 Corals**: elkhorn*, staghorn*, mountainous star, lobed star, boulder star, pillar, and rough cactus

- **1 Plant**: Johnson seagrass*

Denotes critical habitat is designated for the species
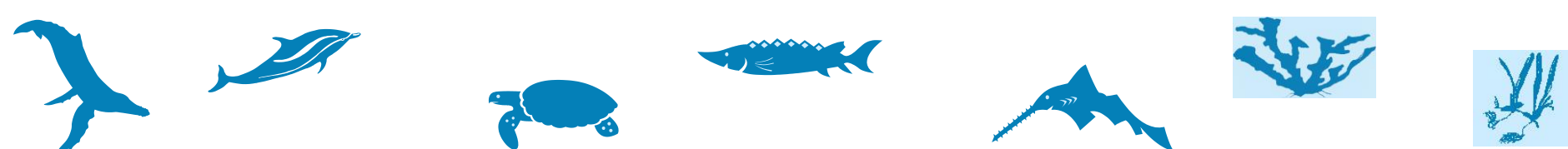
Species Protected under MMPA

- **29 marine mammal species** in the Southeast (some shared with NE), **representing 90 marine mammal stocks!**
- Priority species include:
    - Right whales
    - Sperm whales
    - Bryde's whales
    - Bottlenose Dolphins
    - Short-finned pilot whales

Recent Status Reviews

Petition Date	Species	Involved Parties & Contributions	Funding / Support
Jul 16/Oct 16, 2007	Loggerhead sea turtle	SEFSC/SERO on status review team	
Oct 20, 2009	83 Corals	SEFSC team member	
April 20, 2010	Alabama Shad	SEFSC/SERO prepared status review	BOP
Aug 9, 2010	6 foreign sawfish	SEFSC prepared status review	BOP
Aug 31, 2010	Nassau grouper	SEFSC prepared status review	BOP
Sept 2, 2010	Caribbean electric ray	SEFSC/SERO preparing status review (pending)	Travel
April 6, 2011	Dwarf seahorse	SEFSC/SERO preparing status review (pending)	BOP
Feb 16, 2012	Green sea turtle	SEFSC/SERO on biological review team	
Dec 9, 2011	Sperm whale Northern GOM DPS	OPR	
Feb 27, 2012	Queen conch	University of Puerto Rico prepared species literature review; SERO prepared status review; SEFSC provided data and two staff conducted threats assessment	PO for literature review
Sept 18, 2014	Bryde's whale	SEFSC/SWFSC/NEFSC/SERO/DOI preparing status review (pending)	Travel

Recent Listing Petition Negative 90-day findings

Petition Date	Species
Feb 16, 2010	Warsaw grouper
Sept 1, 2010	Texas pipefish
Sept 3, 2010	Saltmarsh topminnow
Sept 3, 2010	Goliath grouper and speckled hind
April 3, 2012	White marlin
Sept 13, 2012	Yellowtail damselfish

We typically request information/data from the SEFSC to inform listing petition decisions at the 90-day finding stage

Sturgeons

Status	Research Accomplished by
Gulf sturgeon listed 1991 Threatened Joint with USFWS Recovery Plan 1995	1. BOPs to SEFSC PCity for database support and distribution of supplies/equipment 2. IAAs to USGS/IFAS at UF for stock assessments 3. PO to USMiss for genetics work 4. PO to MOTE – gender identity 5. MOU with FWC for GOM telemetry gate 6. PO to USMiss for otolith trace element study 7. IAA with USGS for YOY habitat 8. PO to Del State for habitat and spatial patterns 9. PO to Eglin AFB for analysis of movement data
Atlantic sturgeon listed 2012 Endangered 5 DPSs; 2 in SE No Recovery Plan Shortnose sturgeon listed 1967 Endangered Recovery Plan 1998	1. OPR Section 6 to SCDNR, NCDNR, GADNR for acoustic telemetry and movement 2. Grants with GADNR for population survey and population estimates 3. Grants to SCDNR for survey and equipment 4. IAA to USGS for GIS data layers for riverine habitats 5. IAA to USGS for genetics 6. OPR Section 6 to Del State for telemetry database

ESA Statute Responsibilities By Section

- Section 4 – Petitions, listing, critical habitat designation, recovery plan development

- Section 6 – Cooperative agreements with states

- Section 7 – Consultations with federal agencies on actions they authorize, fund, or carry out that affect listed species and/or designated critical habitat

- Section 9 – Take prohibitions

- Section 10 – Scientific research permits and habitat conservation plans (allow for incidental take occurring in an otherwise lawful activity not subject to section 7)

- Section 11 – Civil penalties, enforcement, citizen suit provisions

Primary MMPA Statute Responsibilities

- **Section 102: Take prohibition**
- **Section 117: Stock assessments**
  - Stock definition and range
  - Population size
  - Current and maximum net productivity level
  - Potential Biological Removal level
  - Annual human-caused mortality and serious injury
  - Status of stock (e.g. strategic, depleted)
- **Section 118: Taking of Marine Mammals Incidental to Commercial Fishing Operations**
  - List of Fisheries and Marine Mammal Authorization Program
  - Monitoring of Incidental takes
  - Take Reduction Plans
- **Title IV (sections 401-410): Marine Mammal Health and Stranding Response**
  - Sections 109(h) and 112(c) for authorizing stranding response agreements

How Do We Determine Priorities?

- Conservation mandates and goals of ESA and MMPA
  - Threats/status/data analyses
  - Recovery plans
  - Take Reduction Team consensus recommendations
- Administration priorities (e.g., infrastructure)
- Internal NMFS needs (e.g., fishery interaction consultation)
- Funding sources
- Litigation
- Public expectations
- Crises
- Emerging threats, common sense, proactive opportunities

SERO Sea Turtle Program Activities

- Work with Office of Protected Resources and U.S. Fish and Wildlife on status reviews/teams, critical habitat designations, and recovery teams/plans

- Assess regional fishery management plan actions and their potential impacts on sea turtles

- Conduct section 7 consultations on Southeast federal actions; monitor incidental take and incidental take statement requirements

- Facilitate development and testing of appropriate research or investigations with industry, gear technicians, and other stakeholders for practical/technical solutions to reduce impacts of bycatch

- Develop and prepare rules to reduce fishery impacts

- Conduct outreach on ways to minimize effects on listed species during fishing activity (e.g., sea turtle release gear protocols)

- Facilitate Section 6 grants with states that reflect program goals and mission

Top Sea Turtle Management Priorities

Commercial Fisheries: Evaluating and reducing the impacts of commercial fisheries. Highest priority = **all regional trawl fisheries**

Recreational Fisheries: Evaluating and reducing the impacts of recreational fisheries. Highest priority= **fishing pier bycatch**

Tools to support Section 7 consultations: Improve our understanding of the **population consequences of human impacts** on sea turtles

Non-fishery threat assessments: Improve our understanding of **energy industry and acoustic impacts**

Sea Turtle Priority Science Needs

- Abundance and population trends

  - In-water abundance/trends

  - Availability of species to surveys for abundance

  - Include demography in population density/distribution work

  - Age-class abundance trends (what is in the "pipeline" to nesting beaches?)

- Sea Turtle Distribution Data

  - Sea turtle size distribution, particularly related to threats (e.g., for analyzing skimmer trawl and TED violation impacts)

Sea Turtle Priority Science Needs

- Bycatch Estimation

  - Shrimp Fisheries: interactions and mortalities

  - Recreational Fisheries

  - South Atlantic Snapper – Grouper Fishery

  - For all fisheries: better ways to account for life stage/recovery unit impacts

- Bycatch Reduction

  - Skimmer trawl research to support rulemaking

  - Identify existing bycatch hot spots of bycatch and bycatch hot spots

Sea Turtle Priority Science Needs

- Improve ability to quantify population effects of takes
  - Better demographic data to allow for more precise and accurate population model results
- Habitat Research
  - Both habitat utilization and identification of habitat components and their role (for critical habitat assessments and consultations)
- Non-Fishery Threats Assessment
  - Better understanding of water quality/pollutant impacts on sea turtles (e.g., lots of information on pollutants documented in eggs, blood etc., but what does that mean to survivorship, fecundity etc.?)
  - Vessel traffic impacts
  - Acoustics Impacts

Marine Mammal Program Activities

- **Reduce commercial/recreational fishery bycatch**
  - Coordinate TRTs & implement TRPs (BDTRT, PLTRT, assist ALWTRT)
  - Conduct annual tier analysis for LOF updates; register fishermen under MMAP
  - Facilitate research to characterize nature of interactions & prevention
  - Provide guidance on fishery management actions
- **Conservation and recovery of endangered marine mammals**
  - Work collaboratively with GARFO and OPR to reduce entanglement of right whales in fishing gear
  - Ship strike reduction- EWS, ship speed rule, voluntary lanes, right whale Southeast Implementation Team (SEIT)
  - Provide ESA section 4, 6, 7, and 10 technical assistance (e.g., Bryde's whale status review)
- **Marine mammal health & stranding response**
  - Network administration (e.g. stranding agreements, parts authorizations, training, Prescott)
  - Implement dispositions & UME/disaster/mass stranding response
  - Evaluate & monitor data for human interactions
- **Take prevention**
  - Develop best management practices
  - Develop innovative outreach strategies; disseminate to user groups
  - Assist OLE & GC EL and State Wildlife Agencies
- **BP-DWH oil spil**l – Damage assessment and restoration activities

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Overview of Science Needs from Mandates

- Science needs mostly driven by ESA Sections 4 & 7, MMPA Sections 117 & 118

- To meet these mandates, information needed on:

  - Population status – estimate abundance, trends, etc.

  - Threats – identify and quantify impacts

  - Solutions – develop/test mitigation options & monitor effectiveness

  - Future – predict future status and threats

Top Marine Mammal Management Priorities

Right Whale Recovery

Bryde's whale status review

Energy: Oil and gas development, alternative energy development, seismic impacts in the Gulf of Mexico and Atlantic.

Commercial fisheries: Implement, monitor, and evaluate effectiveness of TRTs. Revise List of Fisheries.

Gulf of Mexico: Collective impacts to marine mammals in the Gulf of Mexico such as UMEs, energy development, human interactions, and overall poor health from environmental and human pressure. Includes NRDA activities.

Human/dolphin interactions: Recreational hook and line fisheries, illegal feeding, ecotourism, and harassment.

Stranding Response

Outreach

Right Whale Recovery

- Priority Science Needs

    - Mid-Atlantic: Spatial and temporal use by right and other large whales

    - Determine encounter rate/probabilities for small recreational vessels

    - Determine baleen whale responses to in-water structures (e.g., future wind farms)

    - Evaluate nature of entanglements and investigate potential gear modifications or prevention

    - Genetics

Right Whale Recovery

- External Funding For Research and emergency response

    - Predominantly partnerships with States- FL and GA

    - Section 6 Grants

    - Aerial surveys- Right whale population monitoring and ship collision mitigation for federal agencies.

    - Right whale telemetry study

    - Large whale stranding response capabilities (WHOI)

    - GIS analysis-- FWRI

Bottlenose Dolphin Conservation

Priority Science Needs (1)

- *Stock Assessment*
  - Updated abundance & PBR for priority dolphins stocks
  - Augment current microsatellite DNA marker database
  - Enhanced stranding network capacity & training to respond to entangled/injured animals
  - Standardized method to scale human-caused mortality and serious injury documented in strandings data
- *Monitor & Reduce Commercial Fishery Bycatch*
  - Enhanced & increased observer coverage for gillnet fisheries and GoM inshore shrimp trawls
  - Explore ways to observe fisheries in which traditional observer coverage is challenging
  - Research & characterize dolphin interactions with otter and skimmer trawls
  - Implement BDTRT consensus recommendations

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Bottlenose Dolphin Conservation

Priority Science Needs (2)

- *Assess & Prevent Rod and Reel Gear Interactions*
  - Better understand the scope, scale, & frequency of hook/line interactions with dolphins (e.g., MRIP, snapper-grouper fisheries)
  - Better understand dolphin depredation on gear
  - Identify, test and evaluate safe deterrent measures
- *Health Impacts*
  - Better understand the impacts of low salinity/freshwater
  - Determine population impacts of mid-Atlantic UME
- *Assess & Reduce Ecotourism Impacts*
  - Characterize extent of illegal human/dolphin interactions (i.e. feeding and viewing activities causing harassment)
  - Understand consequences of short-term behavioral impacts to individual animals and populations (e.g., St. Andrews Bay- Panama City, FL, Orange Beach, AL, Destin, FL)

Bottlenose Dolphin Conservation

- External Funding For Research

  - NC Sea Grant and MS/AL Sea Grant

  - Partnerships with Sea Grant enable competitive RFPs and facilitate collaborations among institutions and fishermen to address priority research needs identified by the BDTRT, as well as address research needs associated with reducing human interactions with marine mammals.

  - Social Science on attitudes, knowledge, behavior

Pelagic Longline Take Reduction Team

- Priority Science Needs:
  - Analyses of POP data to better understand where and how interactions are occurring (e.g. effort shifts, hooks used, and fishing procedures
  - Gear research to reduce bycatch (e.g., weak hooks)
  - Enhanced abundance and mortality estimates for short and long-finned pilot whales
  - Habitat and density models for pilot whales (from AMAPPS)
  - Increased observer coverage in the Mid-Atlantic
  - Data mining of multiple consecutive sets (related to 20nmi mainline length)
  - Evaluating shifts in effort due to HMS Amendment 7
  - Monitor PLTRP for effectiveness
- External Funding for Research
  - NC Sea Grant –   Competitive grant to fund priority research actions identified by the PLTRT

Marine Mammal Priority Science Needs

- Marine Mammal Health and Stranding Response Program
    - Enhance stranding network capacity and training to rapidly respond to and thoroughly document entangled/injured animals or any other human impacts
    - Better understand hearing loss in stranded and rehabilitated marine mammals. Enhance understanding of hearing thresholds in general.
    - Analyses of mass stranding events, particularly pilot whales.

Marine Mammal Priority Science Needs

- DWH BP Oil Spill-- NRDA
  - Science Center involvement in all aspects of NRDA restoration monitoring
  - Long-term need: Based on Settlement-in-Principle, restoration could occur for 15+ years
- Bryde's Whale
  - Status review leadership and support
  - Better characterize habitat, range, and abundance

Ways to Enhance Collaboration on Science Priority Needs for…

- All Protected Resources
  - A comprehensive SEFSC protected resources matrix program incorporating all ESA/MMPA science needs
- Sea Turtles
  - Annual SEFSC/SERO/OPR meetings to review fiscal year management/science plans and priorities
- Marine Mammals
  - Dedicate a full-time analyst to provide technical assistance
  - Work collaboratively to establish a joint SEC and SER *plan for prioritizing stocks* to ensure management and science needs are met
  - Annual SEFSC/SERO/OPR meetings to review fiscal year, and future year management/science plans and priorities.

Discussion questions

1. What are the highest priority needs for improving protected resources conservation in the region?
2. How well does the SEFSC's protected resources science program align with and support these priority needs?
   1. Areas with strong alignment?
   2. Areas with less capabilities or resources?
3. What recommendations do you have for improvement in types of protected species science to meet the information needs for protected species conservation in the region?
4. How do you see management needs for protected species evolving into the future?